Writing and publishing research articles in teams

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Abstract

This paper provides insight into writing scholarly research articles by working collaboratively in teams. Collaborative writing is increasingly common practice within organizational and university contexts. While there is a growing volume of literature which examines various aspects of collaborative writing from challenges to politics, less attention is paid to practical aspects of how to write in teams, particularly within the context of research training. The article examines practical approaches to collaborative writing, and delineates primary continuities and disjunctions between 'traditional collaboration' relying largely upon physical face-to-face meetings, and 'virtual teams' which are geographically or organizationally dispersed and communicate via virtual, mobile, online or telephony enabled communication.

Introduction

This paper provides insight into writing scholarly research articles by working collaboratively in teams. Writing for publication can be an arduous and time-consuming process. For many early career and established researchers with heavy teaching loads, producing a regular stream of published research papers can seem like a treacherous mountain difficult to climb. Unfortunately, as the adage goes in academic scholarship, 'one must publish or perish'. A method for overcoming this problem, which may open doors to publication and increase research output, is writing research papers collaboratively. While the sole-authored journal article or monograph remain central to advancing scholar's careers and diffusing knowledge, universities are becoming increasingly commercial and output focussed, placing greater emphasis on research productivity (Hearn, Cunningham & Ordoñez, 2004). The stress and busyness of working life are necessitating more efficient ways of producing research outputs. Knowledge creation is shifting towards interdisciplinary partnerships, and there is growing acknowledgement that value and innovation is generated in networks (Tsai & Ghoshal, 1998; Boud & Tennant, 2006; Prahalad & Krishnan, 2008). As a result co-authored research is becoming more and more common practise.

While there is a growing volume of literature which examines various aspects of collaborative writing from challenges to politics (see Colen and Petelin, 2004 and Hedgcock, 2003), less attention is paid to practical aspects of how to write in teams, particularly within the context of research training. Drawing upon my own writing experiences, this paper proposes three primary models for writing scholarly research articles in teams: a 'parallel', 'vertical' and 'combination' model. In the first, writers work together in parallel, while in the second, individuals work separately in an incremental fashion, and in the third co-authors combine these two approaches. As well as increasing productivity, writing in teams can develop a more time-efficient

means of producing articles; it may instil an incentive to write when procrastination would have otherwise prevailed; it can pool ideas and build layers of perspective; and it may provide *de facto* mentorship and personal development for early-career researchers or post-graduate students. While this paper focuses upon journal articles and book chapters, the same principles apply to conference papers and other forms of academic writing including monographs. For research higher degree students, early career researchers and established academics attempting to increase their research productivity, this paper provides insight into processes and strategies for writing collaboratively. For those with previous writing experience, this paper may provide useful tips for sharpening group writing.

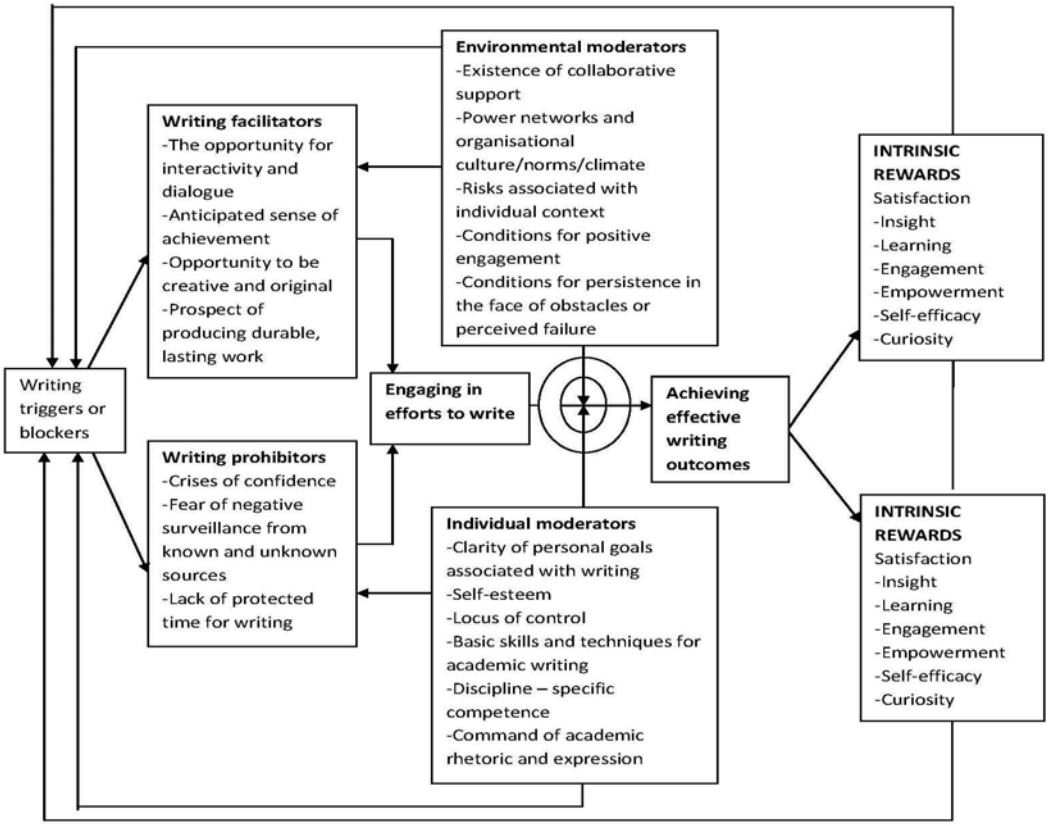
In a digital age, there is a distinction to make between 'traditional teams' relying largely upon physical face-to-face meetings, and 'virtual teams' which are 'geographically, organizationally and/or time dispersed' but connected through information communication technology enabled communication (Powell, Piccoli, & Ives, 2004, p.7). While this article focuses upon co-located teamwork, it provides practical advice and conceptual models relevant to both traditional and virtual teams, and discusses limitations of the latter. Moreover, as co-located teamwork often combines face-to-face contact with synchronous (instant-communication, i.e. a telephone, video-conferencing, Skype conversation) and asynchronous 'virtual' communication (non-instant communication, i.e. an email), the boundaries between the two often overlap.

Collaborative writing

A simple definition of collaborative writing is 'writing involving two or more writers working together to produce a joint product' (Anderson, 1995, p. 195). Within an organizational context, collaborative writing involves various cultural, political and technological factors (for example Anson and Forsberg, 1990; Odell and Goswami, 1982; Driskill, 1989; and Beard and Rymer, 1990).

For Murray and Moore (2006) academic writing is an iterative social process. According to the authors, writing involves a process of 'advancing' which includes turning ideas into prose, writing sections, drafting chapters and so on, but also stages of 'retreating' which leads to refining ideas, rewriting, redrafting and so on. For group writers, communication, discussion, and feedback are at the core of these processes. While sole authorship is largely a silent process, group writing is a continual conversation (Sharples, 1999). As illustrated in the below graphic, writers face personal blocks (time poverty and crises of confidence for example) and triggers (personal ambitions and passion) which are unique to the individual, and are facilitated by other intrinsic factors such as ability, personal goals, and self-esteem as well as environmental factors such as networks, the research culture a researcher is embedded within, support infrastructure and so on (Murray and Moore, 2006, p. 179). While there are no formulas for successful collaboration, Silverman (1999, pp. 144-146) identifies 11 factors which should be considered by authors when forming writing partnerships. In the first instance, there must be a satisfactory *comfort level* between co-authors to ensure a harmonious writing process. This quite simply refers to authors being able to work together. Co-authors should be *dependable* and equally *enthusiastic* about the project to ensure that deadlines are met and similar levels of effort are invested in the process.

Figure 1: A social model of academic writing



Source: Murray, R., & Moore, S. (2006). *The handbook of academic writing: A fresh approach.* Berkshire, United Kingdom: Open University Press.

Co-authors must be able to *prioritise* the writing task for it not to become an item at the bottom of a 'to-do-list'. *Knowledge in the field* is critical to a scholar's choice of collaborator: 'a person who lacks some of the knowledge ... needed to meet his or her responsibilities will be a poor choice unless you are willing to give the person time to acquire these abilities' (Silverman 1999, p.146). On the one hand, *compatibility* between co-author's critical perspectives and theoretical approaches can be beneficial for a research project. On the other hand, in some instances, articles where authors approach the same question from completely different points-of-view (for example classical economics and cultural studies' perspectives) may produce highly innovative work. There must also be mutual *respect* between co-authors, and a *willingness of co-authors to compromise* and *negotiate.* Both of these later qualities are essential when individual authors often approach a subject from very different perspectives and a coherent argument is shaped from a large number of ideas from each author. *Writing* ability *and style* are two final issues (p.145). A co-author must be able to write, yet not having a publishing track-record should not stop a developing writer from writing collaboratively. On the contrary, the collaborative writing process teaches an author invaluable lessons about the writing and publishing process. As Hedgcock (2003, p. 15) argues, 'where participants cooperate effectively, a significant by-product of collaboration is a form of peer teaching whereby each contributor shares his or her knowledge and expertise with fellow contributors'. In terms of writing style, from my own experience, this issue is less of a concern for forming a team than how well individuals work together when editing the final product, an issue which is discussed in more depth below.

At the same time, there are numerous challenges which confront collaborative writing (Colen and Petelin, 2004), and such an approach can be unsuccessful for a range of reasons. As Puntis and Petelin (1996, p. 311) have identified, writing in teams can become more complex than writing individually, and a more time-consuming process for authors without always resulting in higher quality work. Moreover, returning to the social nature of writing outlined above, individual personalities and preconceived ideas can interfere with group dynamics and receptivity to an equal exchange of ideas. Disputes may also arise from an imbalance in power relations and a lack of sensitivity, empathy and diplomacy (p.311).

Where to begin

How and where do you begin when writing research papers collaboratively? Many people believe the starting point is writing a draft or developing and refining an argument. While the latter is partially right, the former is generally not the ideal starting point. Before one can develop a writing team, there should be an idea for an article. However, before the actual writing process begins, authors need to identify a publication to write for. If, for example, you are considering writing a paper about the changing nature of the Australian film industry, such journals may include *Media International Australia: Incorporating culture and policy* with a strong new media, industry and national policy focus; the *Journal of International cultural policy* dedicated to international cultural industry and policy issues; *Continuum: Journal of Media & Cultural Studies* covering Australian and international media and cultural thought; or if it had a hard social science focus, *Prometheus* may be appropriate.

By identifying and writing for a specific publication, from the outset you are writing for a *specific audience* which may be largely national or international, inter-disciplinary rather than disciplinary, practitioner oriented rather than purely academic, and so on. You have a set *style and referencing system.* Publication styles vary greatly for different disciplines: from the MLA Style for arts and humanities (particularly English studies, literary criticism, and cultural studies); the APA style for Psychology, Education and Linguistics; the Legal Citation system for Law; and the IEEE system for Engineering among many other examples. Likewise, there is considerable variation within specific disciplines. Media studies' publications for example, tend to use idiosyncratic house-styles of the Havard/author-date system, and authors must consult respective style-guides before submission. You have a set *word limit* as article lengths vary from between 3,000 to 10, 000 words for different publications; and, perhaps most importantly, you have a *deadline*. Published quarterly or several editions per annum, journal submission dates become working deadlines. Without these elements in place before serious drafting commences, one can flounder around haplessly without a clear objective and may ultimately have to alter their text before submission. These elements do not have to be set in stone when writing begins, but they must, at the very least, be in the back of an author's mind.

Most importantly, established journal themes and specified audiences can frame how an author approaches a particular subject. For example, again referring to film, writing an article for *Screen* or *Metro* will require very different writing approaches. The leading international journal for film and television studies, *Screen*, would require a more rigorous approach to content, whereas *Metro* an Australian journal

with a greater industry/educational focus may accept more subjective language and subject matter. Phraseology such as ‘ground to a standstill’, an ‘insatiable demand for genre films’, and ‘a period of unprecedented commercial success unequalled throughout previous decades’ may be acceptable for an industry-based journal, but border on over-stated hyperbole for a more scholarly journal.

Creating a team

The most obvious method for collaboration is with colleagues or researchers with a complementary interest in a particular topic within your field or faculty. This said, different skill sets enhance team dynamics, although team members within related fields are preferable. Teams comprised of participants from a range of related disciplines within a specific field or related fields, can form the foundation of a well balanced team. With a background in Australian film, policy and industry analysis, a team I regularly wrote with early in my career was comprised of a national media and policy expert (Author 1), and a Chinese creative industries scholar (Author 2). Another collaborative research team in the Creative Industries Faculty, Queensland University of Technology, is comprised of a public historian, a cultural studies new media researcher, and a researcher in informatics and urban sociology.

One of the most important elements of forming a team is creating the right balance. For ECRs or ambitious post-graduate students, one particularly effective strategy is collaborating with experienced researchers, backed by proven publishing track-records. Forming a writing team with supervisors is common across most faculties. By teaming up with proven writers of published works, an ECR can learn the tricks of the trade in academic publishing. For experienced researchers, post-graduates and ECRs bring fresh approaches and a new body of research to complement their own extensive body of knowledge. There are ‘pros’ and ‘cons’ to this approach. On the one hand, teaming up with a senior researcher makes it easier for less experienced writers to publish, and most importantly produce high quality research papers. Senior researchers are generally at the cutting edge of knowledge. They know how funding structures operate and what national funding bodies seek in terms of prospective grant applications. They are generally in sync with innovation and industry waves (depending on respective fields), and they know the fundamentals of high-quality research. Consequently, by virtue of working with an experienced and proven researcher, the chances of an ECR producing a publishable research paper is increased. Developing such a professional relationship may also result in *de facto* mentorship and thus potential personal and career development.

However, a primary con is that senior researchers are extremely busy. So much so that in some cases they may be unable to take on yet another project, or may be unable to contribute significantly to a collaborative project should they commit. Yet with commercialism now a high priority for many universities, researchers are constantly required to sustain and/or increase their research output. Depending on how one structures a respective team – according to what is comfortable for team members – senior researchers are generally excellent at framing theoretical issues and strengthening the conceptual basis of an argument.

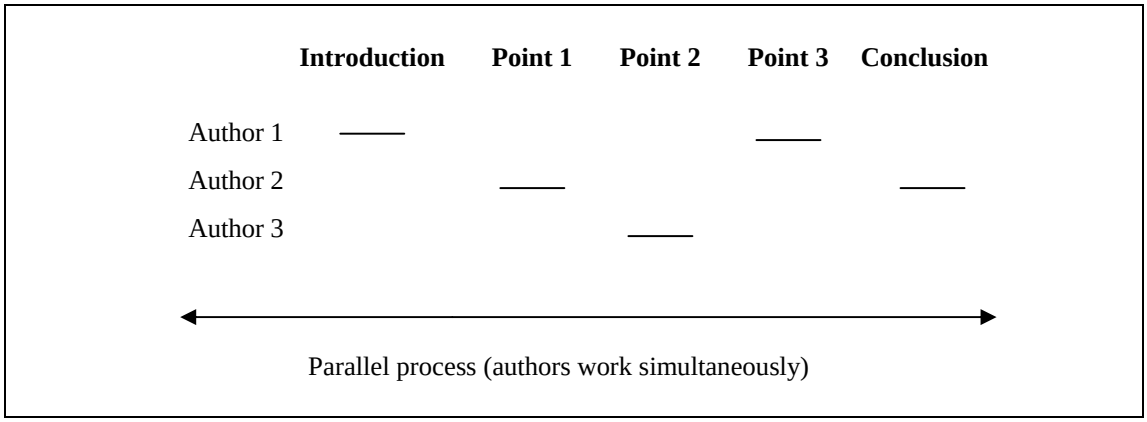
Models for writing in teams: three collaborative authorship models

There is a basic assumption here that most academic articles contain an introduction, three to four key points or sections – including a theoretical/conceptual section, discussion sections, and possibly a case-study that comprise the evidential base for the argument – a conclusion, and generally progress through numerous drafts before reaching a final draft. This article advocates three primary models for writing research papers in teams: the *parallel*, *vertical* and *combination allocation* models.

Sharples' (1999) proposes a *parallel*, *sequential* and *reciprocal* model of co-authorship similar to my approach. Though the first two stages are similar, the emphasis of Sharples' reciprocal model places emphasis on authors physically working together. It involves an author acting as a scribe while other co-authors talk through ideas, or physically writing together in front of a computer screen. My own model on the other hand, focuses on writers working separately – both concurrently and sequentially – after face-to-face meetings and planning sessions. There are moments when co-authors physically work together, particularly during these planning meetings, but in many cases individuals will complete writing tasks in their own time.

For the parallel model, represented in Figure 2, after various meetings and discussions to organise an article's direction, authors are 'allocated' specific sections and work together in parallel on concurrent writing tasks. For example, one author may write a preliminary introduction, while another contextualises the study, and a third author works on the body. Regular meetings are essential to ensure authors are clear on an article's direction, an issue returned to later. For my own articles, Author 1 and Author 2 generally shape introductions; Author 2 generally writes any Chinese sections; Author 1 writes any policy, education or innovation sections; and I normally write discussion and conclusions – but this also changes depending upon the topic.

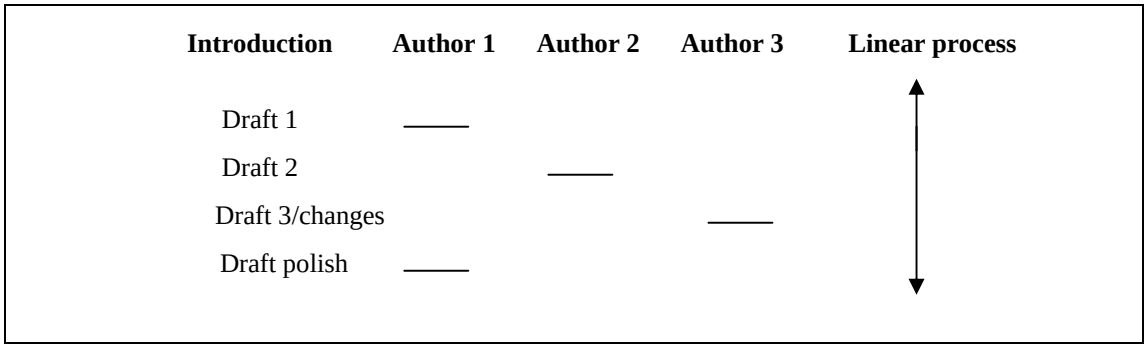
Figure 2: Parallel model: authors work simultaneously in parallel on allocated sections



In some instances, the allocation of sections may be determined by experience, but also writing strengths. I am personally not *au fait* when it comes to writing punchy introductions, but proficient at writing conclusions and empirical chapters. On the other hand, Author 1 and Author 2 are accomplished at crafting introductions and framing the conceptual/theoretical underpinnings of an article. So part of writing in

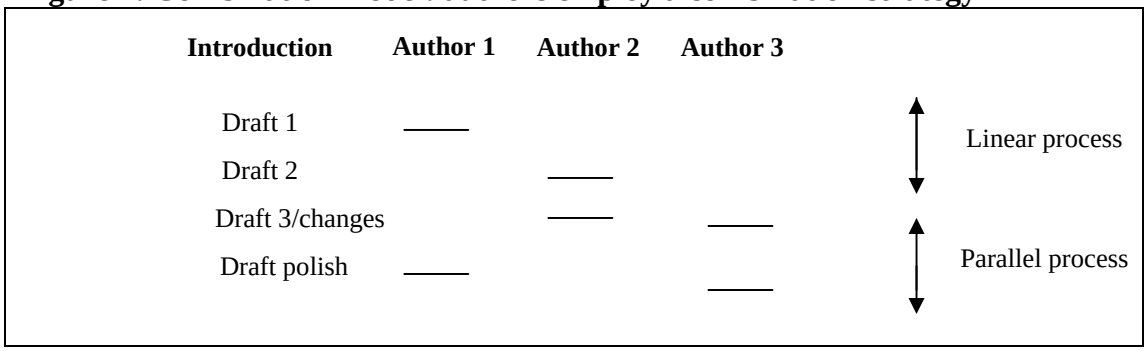
teams – particularly for this model – is about identifying and establishing your place within a team.

Figure 3: Vertical model: draft developed incrementally without parallel collaboration



The vertical allocation model represented in Figure 3 can unfold as follows: one author provides a draft of a paper, perhaps an unpublished conference paper, and another author takes the document and advances this material – this may include adding sections, building and rewriting the argument and so on. As such, a paper is written incrementally without authors working together concurrently. The article is then passed onto the next author then possibly returned to the original author to advance further. This is a common model for starting a research paper.

Figure 4: Combination model: authors employ a combination strategy



While the parallel model is perhaps the most common model, particularly if a team has been working together for several projects, authors are also likely to employ a *combination model*. Such a model generally begins with an existing document, and may progress via a vertical model initially before reverting to a parallel model to standardise style and to edit the piece into a coherent document, or authors may revert to a parallel model after beginning with a working paper (see Figure 4).

Managing drafts

Working with two or more authors can become an extremely chaotic process with each author simultaneously working on specific sections or in some cases the same section, particularly introductions, theory sections and conclusions (as each author may contribute to these sections) more so than findings/discussion chapters. So how does one avoid adding new material to an old draft, or getting confused as to which draft is the latest and so on? Before I begin, it is important to note that there is no right or wrong method. Different people will have different methods for how they approach

this dilemma. The key is developing a method that works for teams and individuals members. A primary method is careful planning, and in the words of Hedgcock (2003, 119):

> Specifying roles in advance equips each participant with an indispensable accountability tool. When each contributor has a job description of some sort, the work of measuring one's own and others' relative contributions becomes much easier then when no explicit responsibilities or boundaries have been established at the outset.

Having regular meetings with co-authors is vital. After general conceptual discussions, it is important to organise tasks between team members. For a parallel model, the most effective way of avoiding overlap and repetition, is for each author to work on one specifically allocated section at a time. Once a particular author finishes a section and moves onto the next – always letting each author know what he or she is working on next – it is useful to have another co-author edit that section. Fresh and detached eyes will always find something that tired involved eyes will miss. In an age of new media and mobile communications enabling real-time communication across vast distances – particularly teleconferencing, MSN, Skype, web-cameras and so on – members unable to attend physical meetings can still engage in strategic discussions.

How authors save drafts to files can avoid the problem of collaborators adding material to old drafts. A method my co-authors and I generally adopt is a respective author's initials and a draft number against a title, for example:

- Brave new world article_MR_draft 4.doc
- Brave new world article_DJ_draft 3.doc
- Brave new world article_MR_draft 3.doc

A number indicates the latest draft; initials indicate which author has added new work. Any variation can work, so long as you establish what version the draft is, and if necessary who last added something to this draft. One method is to add the initials of the last person along with the date at the end of the file name. For example:

- CreativeindustriesExpose_20070607_plh.doc
- CreativeindustriesExpose_20070606_mr.doc

For some authors, having the date around this way arguably makes it easier for a computer to sort the date from the most to the least recent draft. Other authors may prefer the date around the other way, but again this comes down to personal preference. Examples are as follows:

- CreativeindustriesExpose_14072007_plh.doc
- CreativeindustriesExpose_14062007_mr.doc

Using 'Track-Changes'

Track-changes, an auto-function in Microsoft Word documents, is quite literally a method of 'tracking' changes made to a document with the option of accepting or rejecting these changes. When working in a team, track-changes can be a critical tool for keeping 'track' of edits and changes made by multiple authors – with each new entry by a separate author coloured and labelled by name. If a colleague added new material to a section on policy and finance and performed a general edit, you will know what sections have been altered. Consequently, the use of track-changes is essential to a parallel model of authorship. However, once a document is complete a handy tip is to cut and paste the material into a new word document as people who may be asked to review or comment on your paper can still see changes if the function is not turned off, or is turned back on.

Creating a consistent style

How do you create continuity between different writing styles? In comparison to creative writing or more creative forms of non-fiction, the emphasis of scholarly prose is more upon *what* is said rather than *how* something is said – in other words prose must be justified avoiding generalisation, balanced in opinion and treatment of subject matter, all statements must be accurately factual and so on, though clarity of expression and the economy of language are paramount. Nevertheless, a research article can be relatively 'dry' and 'dull' but still be a 'good' and by implication an authoritative research paper. However, screenwriting for example, is the art of visual writing that conveys emotions, develops characters, advances plot and so forth in the most economical, yet colourful – to create mood and tone – way possible. More specifically, *how* something is said can be as important as *what* is said.
Therefore, managing different writing styles between different authors is less of a problem than it is for say two writers attempting to write a screenplay. Dissonant styles can, however, emerge but this is largely managed when a paper is edited – where two or more different styles are coalesced into one consistent style. Moreover, this process can occur naturally after many redrafts as by the time your work has been written, edited, rewritten and edited again by someone else, a uniform style will generally emerge. As discussed previously, this can be assisted from the outset by identifying, and reading articles from, an intended publication.

Maximising outcomes

Maximising research outputs is crucial to becoming a productive researcher. Within a research environment, workloads are fragmented between writing journal articles, book chapters, research consultancies, competitive grants, unpublished discussion and concept papers, lectures, and online blogs. Being strategic about your knowledge creation with the intention of publishing can potentially increase research outcomes. While the focus of this guide is research papers, articles for industry literature and the media are also a possible publishing avenue. While news articles generally do not count towards nationally measured research quotas (Higher Education Research Data Collection research quotas in Australia), writing such articles may augment an individual's profile leading to career-advancing opportunities such as industry consultancies, presentations at industry symposiums, positions on advisory panels and so on.

One method for producing several research articles from a single task is optimising outcomes from a substantial research project with multiple parts, such as a report produced from a competitive research grant or a report for a private consultancy. A PhD thesis, in particular, is fertile ground for potentially three to four research articles. A 20, 000 word report for a funded research project, is potentially the basis – with the average research article between 5,000 to 7,000 words – for three research articles. My co-authors and I, for example, wrote a consultancy report for the United Nations agency, United Nations Conference on Trade and Development. This 20, 000 word report contained an introduction, several sections on core theoretical issues, followed by three case studies exemplifying finance and investment in three unique developing country contexts, namely: China, Latin America and Indigenous Australia. From this report, we refined and expanded these case studies into three separate research articles. As this brief example illustrates, thinking strategically about your research can augment productivity and optimise research output.

Sometimes publishing academic articles – with a long hiatus between submitting/refereeing processes until final publication and entry into online databases – can seem like throwing your paper into a hole in the hope that someone passing by will find it. There are, however, many ways to share and diffuse knowledge with colleagues, including: creating a personal web page, blog or a faculty Wiki page with links to articles; emailing articles to colleagues; or submitting articles to your university's e-prints (www.eprints.org) repository among many other possibilities.

Face-to-face versus virtual teams

How do virtual teams compare to traditional face-to-face teams? On the one hand, virtual teams generate flexibility and responsiveness, while overcoming time and space limitations by eliminating need for physical meetings. However, recent literature also highlights several weaknesses. This is not to imply that face-to-face teams are more effective than virtual teams, rather there are several issues to be aware of when working in virtual teams. As Warkentin, Sayeed, and Hightower (1997, p. 975) argue in their comparative analysis of traditional and virtual teams:

> Teams using this computer-mediated communication system (CMCS) could not outperform traditional (face-to-face) teams under otherwise comparable circumstances. Further, relational links among team members were found to be a significant contributor to the effectiveness of information exchange. Though virtual and face-to-face teams exhibit similar levels of communication effectiveness, face-to-face team members report higher levels of satisfaction.

There are a number of factors for this. As Powell, Piccoli, & Ives (2004, p. 8) observe, 'traditional teams have generally been found to outperform their virtual counterparts with respect to the ability to orderly and efficiently exchange information and engage in effective planning'. According to Warkentin, Sayeed, and Hightower (1997, p. 978), virtual communication does not include 'paraverbal' (tone, inflection, volume of voice) and 'nonverbal' '(eye movement, facial expression, hand gestures, and other body language) cues' natural to face-to-face conversation. Consequently, information exchanged can lose richness, and team members may take longer to reach similar levels of understanding. As they argue further:

> Such communication modalities are constrained to a varying extent depending on the characteristics of the technological system. For example, electronic mail prevents both paraverbal and nonverbal cues, telephone conference calls allow the use of most paraverbal cues (but not nonverbal ones), while videoconferencing enables extensive use of both paraverbal and nonverbal cues (Warkentin, Sayeed, and Hightower (1997, p. 978).

Furthermore, for virtual teams, extensive knowledge sharing and initial face-to-face meeting are necessary to ensure a shared language and project understanding are established; technical proficiency is critical to individual team members' project satisfaction; virtual teams can struggle to achieve 'relationship building', 'cohesion' and 'trust', elements integral to a team's effectiveness; and 'virtual teams tend to have more of a task-focus and less of a social-focus than traditional teams' with impacts for satisfaction levels and team effectiveness among many other issues (Powell, Piccoli, & Ives 2004, pp. 9-10).

Issues and pitfalls that arise from working in a team

Whose name goes first on the author-line once an article is written? This issue becomes more pertinent when there are more than three authors and an in-text reference becomes, for example, Smith et al. The answer basically comes down to negotiation, writing strategies and the management of interpersonal politics. The most egalitarian method is whoever does the most work receives credit as the primary author. If authors are writing several articles together conceptual leadership can sometimes earn principle authorship over who does the most physical writing. Authors can also adopt a rotation system. For one article a particular author receives primary authorship, for the next another co-author is the first named author, and so on.

Some authors adopt an alphabetical scheme for determining authorship. For example, whoever's name is first alphabetically receives credit as primary author, which then applies sequentially to other authors. For example, if the authors were Ryan, O'Brien, and Brown, authorship would become Brown, O'Brien and Ryan. However, the downside of this method is that if your last name is Ryan for example, regardless of whether you did the most work, you will always be one of the last named authors. As this suggests, in some cases this scheme can be unreflective of workloads and contributions to knowledge. In science publishing models, the name of a senior researcher may go first regardless of who made the greatest contribution. In the humanities and social sciences, this is less the case, but again it comes down to individuals negotiating rights to primary authorship. Obviously, the key to an ongoing working relationship is a sense of satisfaction from an output and if individuals' contributions are not adequately reflected, the likelihood is this partnership will break down.

A common problem area with two or more authors is editing. Team members can sometimes pay greater attention to sections they write than a section written by another team member. As previously outlined, the eyes of another author will generally identify typos that you yourself may miss. Therefore, it is important to have someone within the team perform a close edit of the *entire* article from introduction to

conclusion, paying attention to references and endnotes with the latter in particular often overlooked after a rigorous edit of the text.

Management of who is writing what is of critical importance. One pitfall can be that everyone thinks someone else is responsible for a certain task. Footnotes are again a culprit; this task is often delayed until the end and confusion often arises as to who is responsible for their editing. Workloads can also become problematic when an individual author is lumped with the lion's share of the work. But for writing partnerships to continue working successfully, workloads must be shared to gain all of the benefits and efficiencies outlined in the introduction, otherwise writing alone may be more beneficial.

Conclusion

> To take an example, therefore, from a very trifling manufacture; but one in which the division of labour has been very often taken notice of, the trade of the pin-maker … One man draws out the wire, another straights it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving, the head; to make the head requires two or three distinct operations … and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which, in some manufactories, are all performed by distinct hands, though in others the same man will sometimes perform two or three of them (Smith 1776: chapter 1.1.3).

Writing articles in teams, in a sense, can be understood as a production line. While quite different to the pin-making division of labour famously described by classical-economist Adam Smith, one author can write the introduction, another various sections of the body, while a third writes the discussion sections until you have an output which needs detailing and polishing to reach a final product. The parallel model is potentially useful for producing new material from scratch. The weaknesses of such a model are that it necessitates a large amount of people management and micro-management. Without effective management the material can become confused, outdated, and result in a convoluted writing process. The parallel model is useful for developing existing work into a publishable article. The strength of this model is that each separate author can lift a draft to another level or add a new layer of perspective to an existing piece. A possible weakness is that the article can go in a different direction to the author's original intension but this can be managed through meetings and discussions before and during drafting. The combination model combines the strengths of both models but also encapsulates their weaknesses to be negotiated through clear communication and good management.

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